

In the Claims

Claims 1, 7, 8, 10, 11, 23, 32, 33 are to be amended. Claims 34-41 are to be added.

Please Amend Claims 1, 7, 8, 10, 11, 23, 32, and 33 as follows:

Amended Claims (Marked-Up Copy)

1. A microwave circuit package comprising:

✓ a plurality of fluoropolymer composite substrate layers, each substrate layer having a pair of planar surfaces and the plurality of substrate layers being bonded together such that each substrate layer has at least one surface that is adjacent to the surface of another one of the substrate layers~~defining levels and having surfaces;~~
a plurality of metal layers disposed on said surfaces of said plurality of substrate layers;
a plurality of groundplanes comprising a first subset of said plurality of metal layers connected by a first plurality of conductors; ~~and~~
at least one coupler comprising a plurality of coupling lines, wherein said coupler has a substantially spiral-like shape; and
a conductive via passing through at least a pair of substrate layers and through a groundplane positioned between said pair of substrate layers, said conductive via connecting the coupler to signal lines interconnected to signal port terminals, said signal port terminals enabling connection of the coupler to an external signal source;
wherein at least two of the substrate layers have different dielectric properties-

7. The microwave circuit of claim 1, wherein said plurality of coupling lines are distributed across a plurality of different planes formed by adjacent surfaces of pairs of the substrate layers.

8. The microwave circuit of claim 1, wherein said plurality of coupling lines ~~is~~ comprises at least three coupling lines.

10. The microwave circuit of claim ~~9~~1, wherein at least one of said plurality of fluoropolymer composite substrate layers is adhered to ceramic.

11. The microwave circuit of claim ~~9~~10, wherein said package comprises a homogeneous dielectric structure ~~has~~ having embedded active elements.

23. A microwave circuit comprising:

fluoropolymer composite substrate means for defining substrate layers ~~levels~~ and substrate layer surfaces;

metal layer means disposed on said surfaces to define a plurality of conducting layers;

grounding means comprising a first subset of said plurality of conducting layers; ~~and~~

coupling lines means for forming a coupler having a substantially spiral-like shape;

and

a conductive via comprising a ~~same~~ metal as forms said conducting layers, the

conductive via interconnecting the coupler line means to a signal port terminal.

32. The microwave circuit of claim ~~31~~23, wherein at least one of said surfaces ~~is~~ comprises adhered to ceramic.

33. The microwave circuit of claim ~~31~~23, wherein said microwave circuit ~~has~~ further comprises embedded active elements.

Amended Claims (Clean Copy)

1. A microwave circuit package comprising:

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a plurality of fluoropolymer composite substrate layers each substrate layer having a pair of planar surfaces and the plurality of substrate layers being bonded together such that each substrate layer has at least one surface that is adjacent to the surface of another one of the substrate layers;

a plurality of metal layers disposed on said surfaces of said plurality of substrate layers;

a plurality of groundplanes comprising a first subset of said plurality of metal layers connected by a first plurality of conductors;

at least one coupler comprising a plurality of coupling lines, wherein said coupler has a substantially spiral-like shape; and

a conductive via passing through at least a pair of substrate layers and through a groundplane positioned between said pair of substrate layers, said conductive via connecting the coupler to signal lines interconnected to signal port terminals, said signal port terminals enabling connection of the coupler to an external signal source;

wherein at least two of the substrate layers have different dielectric properties

7. The microwave circuit of claim 1, wherein said plurality of coupling lines are

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distributed across a plurality of different planes formed by adjacent surfaces of pairs of the substrate layers .

8. The microwave circuit of claim 1, wherein said plurality of coupling lines comprises at least three coupling lines.

10. The microwave circuit of claim 1, wherein at least one of said plurality of fluoropolymer composite substrate layers is adhered to ceramic.

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11. The microwave circuit of claim 10, wherein said package comprises a homogeneous dielectric structure having embedded active elements.

23. A microwave circuit comprising:

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fluoropolymer composite substrate means for defining substrate layers and substrate layer surfaces;
metal layer means disposed on said surfaces to define a plurality of conducting layers;
grounding means comprising a first subset of said plurality of conducting layers;
coupling lines means for forming a coupler having a substantially spiral-like shape;
and
a conductive via comprising a same metal as forms said conducting layers, the conductive via interconnecting the coupler line means to a signal port terminal.

32. The microwave circuit of claim 23, wherein at least one of said surfaces comprises adhered to ceramic.

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33. The microwave circuit of claim 23, wherein said microwave circuit further comprises embedded active elements.

Please Add the following Claims

34. A microwave circuit package comprising:

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a plurality of fluoropolymer composite substrate layers, each substrate layer having a pair of planar surfaces and the plurality of substrate layers being bonded together such that each substrate layer has at least one surface that is adjacent to the surface of another one of the substrate layers;

a plurality of metal layers disposed on said surfaces of said plurality of substrate layers;

a plurality of groundplanes comprising a first subset of said plurality of metal layers connected by a first plurality of conductors;

at least one coupler comprising a plurality of coupling lines, wherein said coupler has a substantially spiral-like shape; and

a conductive via,

said conductive via passing through at least a pair of substrate layers and through a groundplane positioned between said pair of substrate layers,

said conductive via comprising a same metal as comprises a metal layers on at least one surface of said pair of substrate layers,

said conductive via connecting the coupler to signal lines interconnected to signal port terminals, and

said signal port terminals enabling connection of the coupler to an external signal source, and said conductive via being .

35. The microwave circuit of claim 34, wherein at least two of the substrate layers have different dielectric properties.

36. The microwave circuit of claim 34, wherein said plurality of coupling lines are substantially co-planar.

37. The microwave circuit of claim 34, wherein said plurality of coupling lines are distributed across a plurality of different planes formed by adjacent surfaces of pairs of the substrate layers .
38. The microwave circuit of claim 34, wherein said plurality of coupling lines comprises at least three coupling lines.
39. The microwave circuit of claim 34, wherein at least one of said plurality of fluoropolymer composite substrate layers is adhered to ceramic.
40. The microwave circuit of claim 34, wherein said package comprises a homogeneous dielectric structure having embedded active elements.
41. The microwave circuit of claim 34 wherein the plurality of groundplanes are disposed over the surface of the substrate layers such that the groundplanes extend over an entire surface of the substrate layers other than in areas of isolation cut-outs that isolate the ground planes from signal port terminal connectors.
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